

WE CLAIM:

- 1 1. A standard for calibrating an instrument comprising:
 - 2 (a) one or more viscosity changing polymers; and
 - 3 (b) at least one dye.

- 1 2. The standard of claim 1, wherein the viscosity changing polymer is a pH
2 responsive polymer, a temperature responsive polymer, or any mixture thereof.

- 1 3. The standard of claim 2, wherein the viscosity changing polymer is a pH
2 responsive polymer.

- 1 4. The standard of claim 3, wherein the pH responsive polymer is a liquid at
2 a pH of less than about 4.5.

- 1 5. The standard of claim 3, wherein the pH responsive polymer is a
2 hydrophobically-modified alkali-swellable emulsion polymer.

- 1 6. The standard of claim 5, wherein the hydrophobically-modified alkali-
2 swellable emulsion is an acrylic carboxylate emulsion polymer.

- 1 7. The standard of claim 5, wherein the hydrophobically-modified alkali-
2 swellable emulsion is an alkali-swellable emulsion urethane-modified emulsion polymer.

- 1 8. The standard of claim 1, wherein the viscosity changing polymer has a
2 viscosity of at least about 10,000 cP.

- 1 9. The standard of claim 8, wherein the viscosity changing polymer has a
2 viscosity of at least about 100,000 cP.

1 10. The standard of claim 1, wherein the viscosity changing polymer is
2 transparent to light at a wavelength ranging from about 300 to about 1,000 nm.

1 11. The standard of claim 1, wherein the dye is a fluorescent dye.

1 12. The standard of claim 1, wherein the instrument is a spectrometer, multi-
2 well plate reader, or imager.

1 13. A container for calibrating a spectrometer comprising:

2 (a) a container; and
3 (b) a standard of claim 1 in or on the container.

1 14. The container of claim 13, wherein the container is a plate.

1 15. The plate of claim 14, wherein the plate is a micro-well plate and the
2 standard is in at least one micro-well of the plate.

1 16. The container of claim 13, wherein the container is a cuvette.

1 17. A process for preparing a standard comprising the steps of:

2 (a) mixing one or more viscosity changing polymers and at least
3 one dye; and
4 (b) gelling the mixture.

1 18. A process for preparing a container for calibrating an instrument
2 comprising the steps of:

3 (a) dispensing one or more viscosity changing polymers and at
4 least one dye into a container to form a mixture; and

5 (b) gelling the mixture.

1 19. The process of claim 18, wherein step (a) comprises the steps of:

2 (i) mixing the viscosity changing polymers and the dye;

3 and

4 (ii) dispensing the mixture into the container.

1 20. The process of claim 18, wherein the viscosity of the viscosity changing
2 polymer being dispensed ranges from about 1 to about 1,000 cP.

1 21. The process of claim 18, wherein the viscosity changing polymer is a pH
2 responsive polymer.

1 22. The process of claim 21, wherein step (b) comprises increasing the pH
2 of the mixture sufficiently to gel the mixture.

1 23. The process of claim 22, wherein the mixture in step (a) has a pH of less
2 than about 4.5 and step (b) comprises increasing the pH to at least about 5.

1 24. The process of claim 22, wherein step (b) comprises diffusing an alkaline
2 gas through the mixture.

1 25. The process of claim 24, wherein the alkaline gas is ammonia gas.

1 27. The process of claim 18, wherein the viscosity of the viscosity changing
2 polymer in the gel in step (b) is at about 10,000 cP.

1 28. A method for calibrating an instrument comprising the step of calibrating
2 the instrument with the standard of claim 1.